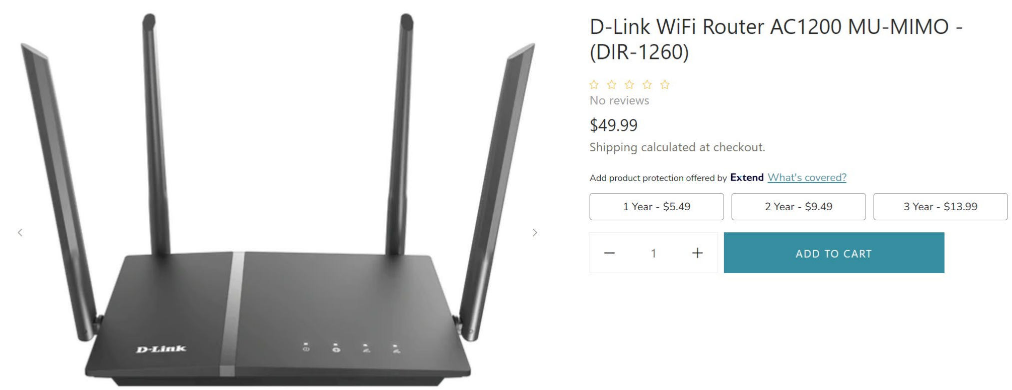
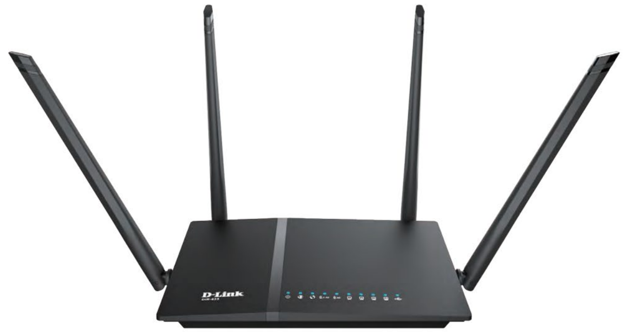
EXHIBIT 7

Exhibit 7: U.S. Patent No. RE48,212

Claim 13	Identification
13[pre] A method to operate a wireless device to encode data using low-density parity-check (LDPC) encoding, the method comprising:	To the extent the preamble is limiting, D-Link-branded devices, such as the D-Link WiFi Router AC1200 MU-MIMO, implement a method to operate a wireless device to encode data using low-density parity-check (LDPC) encoding comprising the steps below.  https://shop.us.dlink.com/products/d-link-wifi-router-ac1200-mu-mimo

Claim 13	Identification



User Manual

AC1200 Wi-Fi Gigabit Router

Preface

D-Link reserves the right to revise this publication and to make changes in the content hereof without obligation to notify any person or organization of such revisions or changes.

Manual Revisions

Revision	Date	Description
7.00	August 15, 2016	• Initial release for Revision G1

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The purpose of this product is to create a constant network connection for your devices. As such, it does not have a standby mode or use a power management mode. If you wish to power down this product, please simply unplug it from the power outlet.

<table>
<tr><th>Claim 13</th><th>Identification</th></tr>
<tr><td></td><td>LDPC is enabled for D-Link DIR-1260 with MT7663 chip.
<pre>config wifi-device 'MT7663_1'
        option enable '0'
        option HT_AMSDU '1'
        option VHT_BW_SIGNAL '0'
        option shortslot '1'
        option VHT_LDPC '1'
        option VHT_SGI '1'
        option VHT_STBC '1'
        option HT_BADecline '0'
        option HT_GI '1'
        option mode 'ap'
        option HT_LDPC '1'
        option pktaggre '0'
        option band '5G'</pre>DIR1260_A1_V1.00B07_GPLCode_20201216.tar.gz\DIR1260_GPL_Release\vendors\DIR-1260\config\wireless_router</td></tr>
<tr><td>13[a] computing a number of modulated orthogonal frequency-division multiplexing (OFDM) symbols for transmitting the data;</td><td>D-Link-branded devices, such as the D-Link WiFi Router AC1200 MU-MIMO, compute a number of modulated orthogonal frequency-division multiplexing (OFDM) symbols for transmitting the data:</td></tr>
</table>

Claim 13	Identification
	19.3.11 Data field **19.3.11.1 General** When BCC encoding is used, the Data field consists of the 16-bit SERVICE field, the PSDU, either six or twelve tail bits, depending on whether one or two encoding streams are represented, and pad bits. When LDPC encoding is used, the Data field consists of the 16-bit SERVICE field and the PSDU, processed by the procedure in 19.3.11.7.5. For LDPC encoding, the number of encoded data bits, N_{avbits}, is given by Equation (19-39); the number of OFDM symbols, N_{SYM}, is given by Equation (19-41); and the number of repeated encoded bits for padding, N_{rep}, is given by Equation (19-42), in 19.3.11.7.5. 802.11 (2020) **19.3.11.7.5 LDPC PPDU encoding process** To encode an LDPC PPDU, step a) to step g) shall be performed in sequence: a) Compute the number of available bits, N_{avbits}, in the minimum number of OFDM symbols in which the Data field of the packet may fit. $$N_{pld} = length \times 8 + 16 \quad (19\text{-}35)$$ $$N_{avbits} = N_{CBPS} \times m_{STBC} \times \left\lceil \frac{N_{pld}}{N_{CBPS} \times R \times m_{STBC}} \right\rceil \quad (19\text{-}36)$$ where m_{STBC} is 2 if STBC is used and 1 otherwise $length$ is the value of the HT Length field in the HT-SIG field defined in Table 19-11 N_{pld} is the number of bits in the PSDU and SERVICE field

Claim 13	Identification
	802.11 (2020) $(p_{n-k-N_{ppcw}}, \ldots, p_{n-k-1})$ of the remaining codewords after encoding. The number of OFDM symbols to be transmitted in the PPDU is computed as shown in Equation (19-41). $N_{SYM} = N_{avbits} / N_{CBPS}$ (19-41) 802.11 (2020) at 19.3.11.7.5 (c)
13[b] computing a number of shortening bits $N_{shortened}$ for at least one LDPC codeword to be used during an encoding;	D-Link-branded devices, such as the D-Link WiFi Router AC1200 MU-MIMO, compute a number of shortening bits $N_{shortened}$ for at least one LDPC codeword to be used during an encoding: **19.3.11.7.5 LDPC PPDU encoding process** To encode an LDPC PPDU, step a) to step g) shall be performed in sequence:

Claim 13	Identification
	c) Compute the number of shortening bits, N_{shrt}, to be padded to the N_{pld} data bits before encoding, as shown in Equation (19-37). $$N_{shrt} = \max(0, (N_{CW} \times L_{LDPC} \times R) - N_{pld}) \quad (19\text{-}37)$$ When $N_{shrt} = 0$, shortening is not performed. (Note that N_{shrt} is inherently restricted to be non-negative due to the codeword length and count selection of Table 19-16). When $N_{shrt} > 0$, shortening bits shall be equally distributed over all N_{CW} codewords with the first N_{shrt} mod N_{CW} codewords shortened 1 bit more than the remaining codewords. Define $N_{spcw} = \lfloor N_{shrt} / N_{CW} \rfloor$. Then, when $N_{shrt} > 0$, the shortening is performed by setting information bits $i_{k-N_{spcw}-1}, \ldots, i_{k-1}$ to 0 in the first N_{shrt} mod N_{CW} codewords and setting information bits $i_{k-N_{spcw}}, \ldots, i_{k-1}$ to 0 in the remaining codewords. For all values of N_{shrt}, encode each of the N_{CW} codewords using the LDPC encoding technique described in 19.3.11.7.2 to 19.3.11.7.4. When $N_{shrt} > 0$, the shortened bits shall be discarded after encoding. 802.11 (2020)
13[c] distributing the number of shortening bits $N_{shortened}$ over the at least one LDPC codeword;	D-Link-branded devices, such as the D-Link WiFi Router AC1200 MU-MIMO, distribute the number of shortening bits $N_{shortened}$ over the at least one LDPC codeword: **19.3.11.7.5 LDPC PPDU encoding process** To encode an LDPC PPDU, step a) to step g) shall be performed in sequence:

Claim 13	Identification
	c) Compute the number of shortening bits, N_{shrt}, to be padded to the N_{pld} data bits before encoding, as shown in Equation (19-37). $N_{shrt} = \max(0, (N_{CW} \times L_{LDPC} \times R) - N_{pld})$ (19-37) When $N_{shrt} = 0$, shortening is not performed. (Note that N_{shrt} is inherently restricted to be non-negative due to the codeword length and count selection of Table 19-16). When $N_{shrt} > 0$, shortening bits shall be equally distributed over all N_{CW} codewords with the first $N_{shrt} \bmod N_{CW}$ codewords shortened 1 bit more than the remaining codewords. Define $N_{spcw} = \lfloor N_{shrt}/N_{CW} \rfloor$. Then, when $N_{shrt} > 0$, the shortening is performed by setting information bits $i_{k-N_{spcw}-1}, \ldots, i_{k-1}$ to 0 in the first $N_{shrt} \bmod N_{CW}$ codewords and setting information bits $i_{k-N_{spcw}}, \ldots, i_{k-1}$ to 0 in the remaining codewords. For all values of N_{shrt}, encode each of the N_{CW} codewords using the LDPC encoding technique described in 19.3.11.7.2 to 19.3.11.7.4. When $N_{shrt} > 0$, the shortened bits shall be discarded after encoding. 802.11 (2020)
13[d] computing a number of puncturing bits $N_{punctured}$ for the at least one LDPC codeword;	D-Link-branded devices, such as the D-Link WiFi Router AC1200 MU-MIMO, compute a number of puncturing bits $N_{punctured}$ for the at least one LDPC codeword: **19.3.11.7.5 LDPC PPDU encoding process** To encode an LDPC PPDU, step a) to step g) shall be performed in sequence:

Claim 13	Identification
	d) Compute the number of bits to be punctured, N_{punc}, from the codewords after encoding, as shown in Equation (19-38). $$N_{punc} = \max(0, (N_{CW} \times L_{LDPC}) - N_{avbits} - N_{shrt}) \quad (19\text{-}38)$$ If $\left((N_{punc} > 0.1 \times N_{CW} \times L_{LDPC} \times (1 - R)) \text{ AND } \left(N_{shrt} < 1.2 \times N_{punc} \times \frac{R}{1-R}\right)\right)$ is true OR if $(N_{punc} > 0.3 \times N_{CW} \times L_{LDPC} \times (1 - R))$ is true, increment N_{avbits} and recompute N_{punc} by the following two equations once: $$N_{avbits} = N_{avbits} + N_{CBPS} \times m_{STBC} \quad (19\text{-}39)$$ $$N_{punc} = \max(0, (N_{CW} \times L_{LDPC}) - N_{avbits} - N_{shrt}) \quad (19\text{-}40)$$ The punctured bits shall be equally distributed over all N_{CW} codewords with the first $N_{punc} \bmod N_{CW}$ codewords punctured 1 bit more than the remaining codewords. Define $N_{\mathrm{ppcw}} = \lfloor N_{\mathrm{punc}} / N_{\mathrm{CW}} \rfloor$. When $N_{\mathrm{ppcw}} > 0$, the puncturing is performed by discarding parity bits $p_{n-k-N_{ppcw}-1}, \ldots, p_{n-k-1}$ of the first $N_{punc} \bmod N_{CW}$ codewords and discarding parity bits $(p_{n-k-N_{ppcw}}, \ldots, p_{n-k-1})$ of the remaining codewords after encoding. The number of OFDM symbols to be transmitted in the PPDU is computed as shown in Equation (19-41). $$N_{SYM} = N_{avbits} / N_{CBPS} \quad (19\text{-}41)$$ 802.11 (2020)
13[e] distributing the number of puncturing bits over the at least one LDPC codeword;	D-Link-branded devices, such as the D-Link WiFi Router AC1200 MU-MIMO, distribute the number of puncturing bits over the at least one LDPC codeword

<table>
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19.3.11.7.5 LDPC PPDU encoding process

To encode an LDPC PPDU, step a) to step g) shall be performed in sequence:

d) Compute the number of bits to be punctured, N_{punc}, from the codewords after encoding, as shown in Equation (19-38).

$$N_{punc} = \max(0, (N_{CW} \times L_{LDPC}) - N_{avbits} - N_{shrt}) \quad (19\text{-}38)$$

If $\left((N_{punc} > 0.1 \times N_{CW} \times L_{LDPC} \times (1 - R)) \text{ AND } \left(N_{shrt} < 1.2 \times N_{punc} \times \frac{R}{1 - R}\right)\right)$ is true OR if $(N_{punc} > 0.3 \times N_{CW} \times L_{LDPC} \times (1 - R))$ is true, increment N_{avbits} and recompute N_{punc} by the following two equations once:

$$N_{avbits} = N_{avbits} + N_{CBPS} \times m_{STBC} \quad (19\text{-}39)$$

$$N_{punc} = \max(0, (N_{CW} \times L_{LDPC}) - N_{avbits} - N_{shrt}) \quad (19\text{-}40)$$

The punctured bits shall be equally distributed over all N_{CW} codewords with the first $N_{punc} \bmod N_{CW}$ codewords punctured 1 bit more than the remaining codewords. Define $N_{\mathrm{ppcw}} = \lfloor N_{\mathrm{punc}} / N_{\mathrm{CW}} \rfloor$. When $N_{\mathrm{ppcw}} > 0$, the puncturing is performed by discarding parity bits $p_{n-k-N_{ppcw}-1}, \ldots, p_{n-k-1}$ of the first $N_{punc} \bmod N_{CW}$ codewords and discarding parity bits $(p_{n-k-N_{ppcw}}, \ldots, p_{n-k-1})$ of the remaining codewords after encoding. The number of OFDM symbols to be transmitted in the PPDU is computed as shown in Equation (19-41).

$$N_{SYM} = N_{avbits} / N_{CBPS} \quad (19\text{-}41)$$

802.11 (2020)

</td></tr>
</table>

Claim 13	Identification
13[f] determining a performance criterion using at least one of the number of shortening bits $N_{shortened}$ and the number of puncturing bits $N_{punctured}$;	D-Link-branded devices, such as the D-Link WiFi Router AC1200 MU-MIMO, determine a performance criterion using at least one of the number of shortening bits $N_{shortened}$ and the number of puncturing bits $N_{punctured}$: **19.3.11.7.5 LDPC PPDU encoding process** To encode an LDPC PPDU, step a) to step g) shall be performed in sequence: If $\left((N_{punc} > 0.1 \times N_{CW} \times L_{LDPC} \times (1-R)) \text{ AND } \left(N_{shrt} < 1.2 \times N_{punc} \times \frac{R}{1-R}\right)\right)$ is true OR if $(N_{punc} > 0.3 \times N_{CW} \times L_{LDPC} \times (1-R))$ is true, increment N_{avbits} and recompute N_{punc} by the following two equations once: $N_{avbits} = N_{avbits} + N_{CBPS} \times m_{STBC}$ (19-39) $N_{punc} = \max(0, (N_{CW} \times L_{LDPC}) - N_{avbits} - N_{shrt})$ (19-40)
13[g] if the performance criterion is not met, increasing the number of modulated OFDM symbols and recalculating the number of puncturing bits $N_{punctured}$;	If the performance criterion is not met, D-Link-branded devices, such as the D-Link WiFi Router AC1200 MU-MIMO, increase the number of modulated OFDM symbols and recalculating the number of puncturing bits $N_{punctured}$: **19.3.11.7.5 LDPC PPDU encoding process** To encode an LDPC PPDU, step a) to step g) shall be performed in sequence:

Claim 13	Identification
	If $\left((N_{punc} > 0.1 \times N_{CW} \times L_{LDPC} \times (1-R)) \text{ AND } \left(N_{shrt} < 1.2 \times N_{punc} \times \frac{R}{1-R}\right)\right)$ is true OR if $(N_{punc} > 0.3 \times N_{CW} \times L_{LDPC} \times (1-R))$ is true, increment N_{avbits} and recompute N_{punc} by the following two equations once: $$N_{avbits} = N_{avbits} + N_{CBPS} \times m_{STBC} \quad (19\text{-}39)$$ $$N_{punc} = \max(0, (N_{CW} \times L_{LDPC}) - N_{avbits} - N_{shrt}) \quad (19\text{-}40)$$ 802.11 (2020) Increasing N_{avbits} increases the number of modulated OFDM symbols. $(p_{n-k-N_{ppcw}}, \ldots, p_{n-k-1})$ of the remaining codewords after encoding. The number of OFDM symbols to be transmitted in the PPDU is computed as shown in Equation (19-41). $$N_{SYM} = N_{avbits} / N_{CBPS} \quad (19\text{-}41)$$ 802.11 (2020) at 19.3.11.7.5 (c)
13[h] generating the encoded data using the number of shortening bits $N_{shortened}$, the number of puncturing bits $N_{punctured}$, and the at least one LDPC codeword, wherein shortening is performed by setting $N_{shortened}$ information bits to 0 within the at least one LDPC codeword, and puncturing is performed by discarding $N_{punctured}$ parity bits from the at least one LDPC codeword; and	D-Link-branded devices, such as the D-Link WiFi Router AC1200 MU-MIMO, generate the encoded data using the number of shortening bits $N_{shortened}$, the number of puncturing bits $N_{punctured}$, and the at least one LDPC codeword, wherein shortening is performed by setting $N_{shortened}$ information bits to 0 within the at least one LDPC codeword, and puncturing is performed by discarding $N_{punctured}$ parity bits from the at least one LDPC codeword: **19.3.11.7.5 LDPC PPDU encoding process** To encode an LDPC PPDU, step a) to step g) shall be performed in sequence:

Claim 13	Identification
	If $\left((N_{punc} > 0.1 \times N_{CW} \times L_{LDPC} \times (1-R)) \text{ AND } \left(N_{shrt} < 1.2 \times N_{punc} \times \frac{R}{1-R}\right)\right)$ is true OR if $(N_{punc} > 0.3 \times N_{CW} \times L_{LDPC} \times (1-R))$ is true, increment N_{avbits} and recompute N_{punc} by the following two equations once: $N_{avbits} = N_{avbits} + N_{CBPS} \times m_{STBC}$ (19-39) $N_{punc} = \max(0, (N_{CW} \times L_{LDPC}) - N_{avbits} - N_{shrt})$ (19-40) 802.11 (2020)
13[i] transmitting the encoded data.	D-Link-branded devices, such as the D-Link WiFi Router AC1200 MU-MIMO, transmit the encoded data. **19.3.3 Transmitter block diagram** HT-mixed format and HT-greenfield format transmissions can be generated using a transmitter consisting of the following blocks: a) *Scrambler* scrambles the data to reduce the probability of long sequences of 0s or 1s; see 19.3.11.3. b) *Encoder parser*, if binary convolutional code (BCC) encoding is to be used, demultiplexes the scrambled bits among N_{ES} (number of BCC encoders for the Data field) BCC encoders, in a round robin manner. c) *FEC encoders* encode the data to enable error correction. An FEC encoder may include a binary convolutional encoder followed by a puncturing device, or it may include a low-density parity check (LDPC) encoder. 802.11 (2020)